Necessary opt. conditions → CQ, KKT (inequality / equality & inequality)

Sufficient opt. conditions → saddle point of $L(\underline{x}, \underline{u})$

Lagrangian duality → (P) → (D) → solve (D)

Second order opt. → KKT sufficient / necessary (w/ $L(\underline{x}, \underline{u})$)

Quadratic **P**rogramming → $q(\underline{x}) = \frac{1}{2}\underline{x}^T Q \underline{x} + \underline{c}^T \underline{x}$
- only equality → Null space method
- eq. & ineq. → Active-set method

Penalty methods →
- Quadratic penalty method
- Augmented lagrangian method
- Barrier method